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School Psychology Recruitment: Utilizing Experiential Learning to Increase Interest among College Students

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by

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School Psychology Recruitment: Utilizing Experiential Learning to Increase Interest among College Students

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The purpose of this study is to explore possible interventions aimed at educating college students about the roles, services, settings, and job outlook for school psychologists as a means to increase interest in the field as a graduate school career option. More specifically, the proposed study aims to test what type of educational activity- didactic information presentation versus didactic information presentation coupled with an experiential learning task- interacts with which learning style to produce the greatest gains in interest in the field as a graduate school option. Further, the proposed study seeks to determine if a correlation exists between knowledge of school psychology and level of interest in the field.

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Chapter One: Introduction

School psychology is ranked as one of the best careers in today's popular media: a strong job outlook and desirable working conditions (such as high job status, high job security, and the rewarding nature of a school psychologist's job) are several of the reasons behind the career's high rank (U.S. News and World Report, 2009; U.S. News and World Report, 2011). Opportunities to work in a wide range of settings may also be a desirable trait; there continues to be opportunities for school psychologists to work in settings such as hospitals, state departments of education, and private practice, along with school settings. Of the 37,893 school psychologists practicing in 2004, over 20% worked in settings outside of schools (Charvat, 2005). Yet, as evidenced by a continuing shortage of school psychologists, fewer individuals are choosing to enter the field of school psychology than are needed (Reschly, 2000).

The shortage of school psychologists has existed throughout the field's history, documented as early as the first school psychology conference (Fagan, 2005) and seen today in the vast number of school psychologist job-vacancies in schools today (Reschly, 2000). Causes of the shortage appear to be threefold: (1) demand for school psychologists has risen with a growing population and federal education legislation (Fagan, 2005), (2) a large number of currently practicing professionals are reaching retirement age (Curtis, Hunley, & Grier, 2004), and (3) the low interest level in school psychology by college students (Gilman & Handwerk, 2001). While this proposed study focuses on the third cause, the first two are also critically important in any resolution to the shortage faced by school psychology.

One impetus driving the need for school psychological services in the United States was compulsory education, enacted first by Massachusetts in 1852 (Fagan, 1992). With the unprecedented growth in number of children in schools, the sheer number of students with "mental defects" and related educational problems increased (Wallin, 1914), creating a demand for physical and mental health practitioners in schools. More recently, the enactment of federal education legislation such as the Education for All Handicapped Children Act (EAHC) of 1975, section 504 of the Rehabilitation Act, the Individuals with Disabilities Education Act (IDEA) of 1997, Individuals with Disabilities Education Improvement Act (IDEIA) of 2004, and the No Child Left Behind Act

(NCLB) of 2001 has mandated the provision of school psychological services, increasing the demand for trained personnel to meet federally-mandated requirements for services. IDEA, in particular, expanded the required mental health services provided by schools and, as a result, also greatly expanded the role of school psychologists (Steege, 1998; Tharinger, Pryzwansky, & Miller, 2008).

On the heels of the Education for All Handicapped Children Act of 1975 (EAHC), the school psychology witnessed dramatic growth in personnel. The number of school psychologists employed in public schools grew from around 9,950 shortly after the implementation of the EAHC to 23,806 several years later (Reschly, 2000). Now the wave of professionals who entered the field after the enactment of EAHC are reaching retirement age, leading to the "graying" of the field (Curtis, Hunley, & Grier, 2004). Over half of all states are expected to experience a 50% or higher rate of retirement among practicing school psychologists by the year 2012 (Thomas, 2000), with doctoral-level practitioners predicted to exit at a higher rate than non-doctoral school psychologists. Further, it is predicted that fewer practitioners will enter the field than will exit over the next decade (Ehrhardt-Padgett, Hatzichristou, Kitson, & Meyers, 2004), leading to an inadequate supply of trained professionals to meet demand.

One contributing reason for the shortage of school psychologists is low interest in graduate training in school psychology among college students, resulting in a limited number of possible replacements for those retiring from the field. In a study of college students' perceptions and interest in various psychological disciplines, individuals who majored in education and psychology ranked school psychology as a desirable choice for graduate study much less often than clinical or counseling psychology (Gilman & Handwerk, 2001). The lack of interest in school psychology as a career option may be due in part to the limited exposure individuals have to the field: unlike other health and education fields that deliver a wide variety of services, school psychology encourages intense specialization to serve a relatively limited proportion of the population. Additionally, although individuals often interact with health professionals in fields like nursing, few students interact with a school psychologist during their educational careers, which may lead to a lack of awareness of the field as a potential career choice.

Perhaps due to the low levels of interest in school psychology overall, there is very little in the literature regarding strategies for addressing the shortage. When exploring possible recruitment strategies, it is necessary to look at a similar field that the general public is more familiar with, one that has a broader base of research around strategies for increasing recruitment for training programs. The field of nursing fits that profile; nursing is experiencing a personnel shortage with possible causes that closely mirror those involved in the shortage of school psychologists. Like school psychology, the demands on the nursing field increased greatly with vast changes in health care and the aging baby-boomer population. The average age of nurses is climbing steadily toward retirement age and, similar to school psychology, the number of nurses entering the field has not increased (Needleman, Buerhaus, et al., 2001). Yet two major elements differentiate the field of nursing from school psychology: the type of health services offered and the populations served. Nurses provide *physical* health services, which every individual will require at some point in their lives, while school psychologists provide *mental* health services, which only a portion of the population will require and/or seek out during their lifetimes. In other words, everyone receives services from a nurse at some time, while few receive school psychological services. Due to the widespread need for nurses, the nursing shortage has reached "crisis" standing in the eyes of the public, prompting research into possible solutions.

The shortage of nursing personnel has prompted research into what attracts individuals to the field and, once enrolled, what retains students in nursing training programs. The U.S. Department of Health and Human Services (1986) found that students seek entrance into training programs when the program capitalizes on the reality and excitement of hands-on experience with patients. Research has also shown that clinical placements, when combined with theory-driven classes, provide opportunities for students to apply theories to practice and thus enhance the learning experience (McKenna, Wray, & McCall, 2009). Connecting classroom learning to "in situ" application of theories and skills appears to be critical to recruiting nurses and limiting attrition.

The use of hands-on, experiential activities to enhance learning experiences is also a major focus of Kolb's Experiential Learning Model (Kolb & Fry, 1979), which

argues that learning must be grounded in experience. When learning takes place in an experiential context- such as placing nursing students in clinical settings- students can transform the experience through reflection and real-time experience can increase interest in careers in the field experienced. There is some evidence that exposure to the practice of school psychology via experiential learning may also increase interest in school psychology. In a recent study of students currently enrolled in school psychology training programs, the majority of participants had been involved in at least one experiential learning experience- such as shadowing professionals or working with children in schools- prior to entering training (Highley & Carlson, under review). Similarly, Gilman and Handwerk (2001) found that most college students first learned about school psychology from talking with or shadowing a practicing school psychologist.

Experiential learning experiences may be more beneficial for some learning styles than others. Kolb (1984) described four different learning styles: diverging, assimilating, converging, and accommodating. Individuals with accommodating and diverging styles tend to learn best from hands-on experiences, whereas individuals with assimilating and converging learning styles tend to learn best from working with abstract theories (Kolb & Kolb, 2005). Therefore, individuals with accommodating and diverging learning styles are likely to benefit the most from an experiential learning recruitment strategy, while individuals with assimilating and converging learning styles are likely to benefit more from didactic, theory-based educational experience.

The proposed study draws on the principles of experiential learning to look at the relative efficacy of two recruitment strategies designed to increase interest in school psychology as a career choice. The two strategies differ in terms of the experiential-learning component: one strategy combines a classroom-type didactic information session and an experiential-learning activity, while the other consists of the didactic session alone. Outcome variables of interest include the change in interest levels pre- and post- intervention and longitudinally, as well as whether different learning styles interact with treatment condition to produce differential gains in interest level.

Chapter Two: Integrative Analysis

School Psychology: Past and Present

A Brief History

The history of school psychology is defined by differentiation, expansion, and increasingly high demand. School psychology emerged from Lightner Witmer's Clinical Psychology, and G. Stanley Hall's Child Study movement (Fagan, 1992). Witmer founded the first psychological clinic in the United States, and his concepts of practice are widely accepted as the foundation of both clinical and school psychology (Fagan, 1986). In his clinic, Witmer provided services to children on referral from their teachers, parents, or local agencies as well as in public school settings across Philadelphia (Fagan, 1988) and advocated for a new discipline focusing on educational situations but with the training of a psychologist (Fagan, 1992). Witmer's recognition of the need for a psychological discipline devoted to educational arenas began the field's differentiation from that of traditional clinical psychology.

Granville Stanley Hall provided the impetus for school psychology's continued differentiation from clinical and counseling psychology. Spearheaded by Hall, the Child Study movement sought to bring the methods of experimental psychology to bear in discovering all that could be known about children (Davidson & Benjamin, 1987). These discoveries included the exploration of educational difficulties and learning processes taking place among the nation's growing school population, and the resulting theories and methods that developed from Hall and the Child Study Movement greatly influenced the evolution of school psychology (Fagan, 1992).

Perhaps due to the influences of several different pioneers on the development of school psychology, the field has struggled throughout its history to differentiate itself from other psychological disciplines. While school psychology emerged from movements in clinical and counseling psychology, the field continues to share roles with both, including therapy and consultation, making it difficult to fully differentiate the field from clinical and counseling psychology. This struggle may be compounded by the very nature of the discipline, including the multiple pathways to enter the field and the large number of functions and settings in which school psychologists serve. Contemporary school psychological practice is characterized by a diversity of roles and functions (Fagan,

1992), ranging from performing special education qualification assessments in schools to researching the neurological functioning of children with autism in hospitals. In fact, the field has passed the point where one can be trained to perform all roles and functions with competence during formal professional preparation (Fagan, 2002).

The need to establish a clear identity for school psychology and to differentiate the discipline from similar disciplines has been a topic of discussion throughout its history. In fact, the importance of clearly establishing identity and raising the public awareness of school psychology was one of the major reasons for holding the Thayer Conference, the inaugural conference of school psychology practitioners and academics (Fagan, 2005). The lack of awareness of school psychology in the general public was seen as an impediment in the development of a unique identity for the field and was discussed in depth during the conference, with recommended solutions recorded and disseminated to practitioners not in attendance. Recommended solutions included creating state school psychology associations, disseminating information about school psychology to the general public, and increasing publications in educational and psychological journals. Since the Thayer Conference, many of these goals have been achieved- all states now have at least one school psychological association and APA Division 16 has established a journal for school psychology (Fagan, 2005). However one solution appears to have been forgotten- school psychology remains a lesser-known psychological discipline (Gilman & Handwerk, 2001).

As the field struggled to establish a unique identity, so too did school psychology practitioners. Training and practice recommendations that came from the Thayer Conference specifically named two levels of training: doctoral and subdoctoral, with the titles "school psychologist" and "school psychological examiner" respectively. However, changes were slow to be realized; after the Thayer Conference, practitioners still held 75 different professional titles, reflecting the continuing identity struggle within the field. Change continues to be slow; in his historical perspective paper on the Thayer Conference, Fagan (2005) stated that, "[F]or the foreseeable future, there is neither a resolution of the doctoral issue for the school and nonschool practice of school psychology, nor the likelihood of a merger of the Division of School Psychology and the NASP into a unified, national-level organization…" (page 254). The continuing identity

struggle within the field is likely to impact the field's ability to present school psychology as a unified discipline to potential future members compounded by the fact that disciplines like counseling and clinical psychology, which provide many services similar to school psychologists, appear to be more well known by the general public (e.g. Gilman & Handwerk, 2001).

Supply and Demand

Along with discussions of establishing an identity for school psychology and differentiating the field from counseling and clinical psychology, the issue of supply versus demand was also discussed at Thayer Conference. Held in 1954, the Thayer Conference took place at a time when demand for trained professionals began to outpace supply. At the time, it was estimated that there were 1,000 school psychologists in the field; compared to this number, an estimated 15,000 professionals were needed to meet demands (Fagan, 2005).

Several years after the Thayer Conference, school psychology underwent a period of rapid growth. In an era marked by social reforms, the child-saving mentality of the 1960s changed the view of children as a source of love and affection- replacing the earlier view of children as small adult sources of labor (Fagan, 2002) - greatly increasing demand for mental health professionals for children. This new view led to several reform movements directly related to the emergence of school psychological services, including: compulsory schooling, juvenile courts, child labor laws, mental health awareness, the growth of institutions serving children, and an array of other child-saving services focused on preserving childhood and enhancing the lives of children (Fagan, 1992).

Demand for school psychologists continued to be driven by the rapid growth of special education services resulting from state and federal legislation and regulations, as well as the gradual but persistent expansion of roles school psychologists were called on to fill (Fagan, 2005). One of the seminal pieces of federal legislation, the Education for all Handicapped Children of 1975 (EAHC) greatly expanded the role of psychologists in schools and spurred demand for the services provided by trained professionals. Prior to the enactment of EAHC, students with disabilities and their parents had few resources available to them; schools served only one in five students with disabilities, and many states had laws excluding individuals with specific disabilities- including deafness,

blindness, mental retardation, and emotional disturbance- from attending school and receiving an education. Most families of children with disabilities were not afforded the opportunity to be involved in educational decisions, and few mental health resources were available (U.S. Department of Education, 2010).

The Education of All Handicapped Children Act was the first to require *psychological services* in educational settings, and was responsible for bestowing the right to education to children with disabilities and for expanding the roles of, and demand for, mental health professionals in schools. Defined as assessment, test interpretation, consultation, service planning, and intervention services (Reschly, 2000); the requirement of psychological services greatly changed the educational landscape. EAHC and its re-enactments (Individuals with Disabilities Education Act of 1997, Individuals with Disabilities Education Improvement Act of 2004) have resulted in students with disabilities achieving at levels previously unimaginable. Students with disabilities now receive high-quality early interventions that reduce or even prevent the need for future services, attend neighborhood schools, and often have access to the general education curriculum. Furthermore, the parents and/or families of students in schools across the nation are encouraged to be active in educational decisions and collaboration between school personnel and parents is required by federal law.

Following the implementation of federal education mandates, the supply of school psychologists entering the field increased some, while demand for professionals trained to deliver psychological services increased tremendously (Curtis, Hunley, & Grier, 2004). An estimated 1,750 new school psychologists entered the field each year (Curtis, Grier, & Hunley, 2004), yet vacant positions in schools and training settings continued to remain unfilled (Reschly, 2000).

Demand for school psychologists continues to be far greater than supply, threatening the field's ability to meet the needs of schools, families, and children they are called on to serve. Demand continues to exceed supply in both practice and training settings (Fagan, 2005) and the consequences of such an unbalanced system results in many children and families continuing to have unmet needs and receiving no services (Sheridan & D'Amato, 2004). The shortage of school psychologists in schools translates to larger caseloads and less time to devote to non-assessment practices. The larger the

number of students a school psychologist is expected to serve, the less time said practitioner can devote to other required functions of psychological services, including consultation, intervention, and behavior analysis. While demand continues to be driven by federal legislation and a growing population, a similar increase in supply has not been seen.

There are approximately 200 school psychology training programs across the United States that feed into the supply of trained professionals. This supply source is greatly affected by the continuing existence of faculty-position vacancies in school psychology training programs; a record number of trainer positions remain vacant (Kratochwill, Shernoff, & Sanetti, 2004). These vacancies are particularly serious in that they may limit institutions' ability to prepare new school psychologists, thereby compounding the shortage (Curtis, Grier, & Hunley, 2004). Further complicating this issue is the fact that an estimated two-thirds of unfilled positions (faculty as well as school practitioners) require a doctoral-level trained professional, and that within the doctoral-level vacancies, a disproportionate number of unfilled positions occur in university faculty positions (Curtis, Hunley, & Grier, 2004).

The disproportionate number of vacancies in doctoral-level positions is likely influenced by several factors. The number of doctoral-level individuals entering the supply pipeline has not increased significantly over the past few decades, and only a small number of new psychologists apply for academic positions (Connolly & Reschly, 1990), choosing instead to enter private practice, hospitals, or other mental health service settings.

The roles and functions school psychologists are asked to fill may also be playing a part in the continuing supply shortage. As a key part of special education, school psychologists generally spend a majority of their time assessing students for special education eligibility rather than addressing needs at a more systematic level through prevention and early intervention. Practitioners are spending the majority of time assessing a small proportion of the students, rather than developing and implementing interventions and programs designed to prevent and/or alleviate more widespread difficulties. Under the current model, if a child struggles with social skills and is bullied in school, the school psychologist is more likely to assess the individual child's social

skills abilities and counsel him or her individually than to implement school-wide social skills curricula that addresses how to handle bullying. The current delivery model perpetuates the need for a growing number of school psychologists to complete assessments on the growing public school population (Ehrhardt-Padgett, Hatzichristou, Kitson, & Meyers, 2004).

The current model of school psychology not only perpetuates the need for more professionals; it also compounds the shortage by encouraging specialization while practicing in a wide range of settings. Despite the large number of school psychologists who work in schools, many others are working in non-school settings and roles. In fact, contemporary school psychological practice is characterized by diversity in roles and functions previously unseen (Fagan, 1992).

The extensive array of duties, roles, knowledge, and skills within school psychology has resulted in a movement within the field towards intense specialization and longer training programs (Fagan, 2005). Specializations in neuropsychology, family systems, cognitive-behavioral therapy, and many other areas within school psychology are available, and while the American Psychological Association only requires a doctoral program to be three full years (APA, 2007), most programs exceed this time requirement (Fagan, 2005). For example, many doctoral-level programs extend from five to seven years in order for their students to be competitive for specialized internships and post-docs.

When demand for trained school psychologists skyrocketed in response to the enactment of the Education for All Handicapped Children in 1975, the field responded with a boom in the number of school psychologists entering the field. This initial increase in supply may now be linked to the severe shortage of school psychologists, as the increased numbers of professionals who entered the field in late 70s have reached, or are reaching, retirement age (Curtis, Hunley, & Grier, 2004), and almost one in three practicing school psychologists is now over the age of 50 (Curtis, Grier, & Hunley, 2004), leading to the "graying" of school psychology. It is believed that, similar to other educational and allied health fields, a substantial proportion of school psychology faculty and practitioners will retire in the next ten years, leading to continuing shortages (Reschly, 2000).

School Psychology as a Career Choice

The largest applicant pool for graduate training is made up of college students, and there is evidence that this applicant pool has limited knowledge of, and interest in, school psychology as a career option (Graden, 1987; Gilman & Handwerk, 2001). A seminal study conducted by Gilman and Handwerk (2001) examined undergraduates' perceptions of a range of psychological disciplines, with particular attention paid to college students interest in graduate school training in general, knowledge of the roles and duties of school psychologists specifically, and where participants had obtained information about various psychological disciplines.

To measure these constructs, the authors conducted a literature review on a variety of disciplines within professional psychology and created the *Undergraduate Psychology Information Inventory* (UPII), a survey based on that review. Included in the survey are the disciplines of clinical, counseling, school, social, neuropsychology, industrial/organizational, developmental, educational, experimental, and sport psychology (Gilman & Handwerk, 2001).

The UPII was divided into five sections, each of which focused on a different aspect of college students' perceptions of knowledge and interest in psychological disciplines. Section one asked students to rate their perceived knowledge of each discipline using a 4-point Likert scale while section two asked participants to chose where they had learned about the each discipline from a list of potential sources, including instructors, course textbooks, personal experiences, and other options. Section three asked students if they expected to apply to graduate school and in what discipline, section four assessed knowledge of the roles each discipline included (such as individual therapy and research), and section five asked students to match disciplines to case studies. The content validity of the UPII was assessed by a variety of professionals across psychological disciplines, and changes to the content were made based on comments made by this expert panel (Gilman & Handwerk, 2001).

Gilman and Handwerk distributed the survey to 622 college education, psychology, and other majors attending five universities, all of which housed school and clinical psychology graduate programs with active research and clinical agendas (Gilman

& Handwerk, 2001). The results of the survey are of great concern to the future of school psychology: of participants who anticipated applying to graduate school, the greatest number intended to apply to clinical or counseling psychology programs. When participants *did* include school psychology in their rankings, they generally included it as a third choice. Of note, these rankings were given *despite* participants listing duties of school psychologists- such as working with children and families- as the primary reason for their choices. Similarly, the mean rating for knowledge about school psychology was only moderate, or "somewhat knowledgeable", indicating that there is a lack of familiarity with the field among undergraduates (Gilman & Handwerk, 2001). Interestingly, students reported learning more about school psychology via personal experience (such as meeting a school psychologist) than they did about clinical psychology.

Embedded within the shortage literature, several strategies aimed at increasing the supply of school psychologists to schools have been proposed. However, no data on the effectiveness of these solutions has been reported and there has been little focus on other aspects of the shortage (e.g. increasing the number of individuals entering training positions). One such strategy, that of actively recruiting individuals into training programs, appears most often (e.g. Ehrhardt-Padgett, Hatzichristou, Kitson, & Meyers, 2004, Gilman & Handwerk, 2001; Kratochwill, Shernoff, & Sanetti, 2004), yet specific, detailed descriptions of how to do so have not been discussed. For example, disseminating information about the field of school psychology to the public was offered up as a solution to the shortage during the Thayer Conference (Fagan, 2005), and was echoed more recently by Gilman and Handwerk (2001), who suggested that opportunities for direct, experiential contact with currently practicing school psychologists would greatly aid the public relations approach towards increasing interest in school psychology.

While Gilman and Handwerk measured interest and knowledge levels among the applicant pool for school psychology training programs, Highley and Carlson (under review) explored what influenced current graduate students to pursue training in school psychology. The authors conducted a survey of students currently enrolled in school psychology graduate programs and found that, similar to suggestions made by Gilman

and Handwerk, a large majority of current students had become aware of the field and interested in pursuing training after being involved in hands-on experiences in the field, including working in after-school programs, shadowing practitioners, and volunteering with children.

The studies conducted by Gilman and Handwerk (2001) and Highley and Carlson (under review) both suggest a possible strategy to recruit individuals into school psychology training programs. Both studies suggested that individuals become interested in school psychology through hands-on experiences like working in an after school program or volunteering as a tutor for children with disabilities. Both studies also suggested that individuals learn about and become interested in the field after meeting and speaking with or shadowing a currently practicing school psychologist. Yet despite the evidence in support of these strategies, little has been done to test this recruitment strategy, nor to measure the effects of hands-on experiences on interest in school psychology as a potential career field. Due to this dearth of information, it may be important to look at fields similar to school psychology that have recruitment strategies in place to use as a model.

Nursing: A Role Model for School Psychology?

School psychology is not the only health field experiencing a severe personnel shortage. Nursing, similar in many ways to school psychology, is also facing a severe shortage of personnel (Scanlon, 2001). Like school psychology, there are many specialties within the field of nursing, and nurses are called on to serve a wide range of populations in many different settings. Yet while only a small proportion of individuals seek or require the mental health services provided by school psychologists, almost every person receives the services provided by a nurse in their lifetime. This major difference between the fields may be responsible for the difference in attention paid to the personnel shortages. Substantially more research has been dedicated to the shortage of nurses and strategies to alleviate the shortage than has been dedicated to the shortage of school psychologists, likely due to the larger population affected by the nursing shortage. Furthermore, a shortage of nursing personnel has serious implications for the quality of patient care in the United States: as the U.S. population ages, the demands on nurses

becomes greater, and the quality of care goes down as nurses are asked to serve more patients than ever (Scanlon, 2001).

Nursing professionals are in high demand in hospitals, clinics, and other settings across the United States, and supply is unable to meet the demands. Several elements are influencing both the supply of and demand for nurses. Raising the demand for nurses and nurse aides are the aging of the baby boomer generation (Scanlon, 2001), changing healthcare legislation (Nevidjon & Erickson, 2001), and the growing diversity of the population in the United States (Aiken, Cheung, & Olds, 2009). A lack of nurse-trainers, the aging of the current nursing workforce (Scanlon, 2001), and the wide array of specializations and settings in which nurses may enter (U.S. Department of Health and Human Services, 1986) curtail the supply of nurses to the field.

The shortage of nursing staff is being felt in various settings, including hospitals, nursing homes, and mental hospitals. In 2002, the number of registered nurse (RN) vacancies was over 125,000 (Murray, 2002), and estimates of future shortages range from 300,000 to over a million vacant nursing positions (Aiken et al., 2009). The recruitment and retention of nurses is a major concern for health care providers and policy makers; several congressional sessions have been devoted to discussing the shortage of nursing personnel and strategies to reverse this trend. In his testimony before the U.S. Committee on Health, Education, Labor, and Pensions, William Scanlon described the recruitment and retention of nurses and nursing aides as a major concern for health care providers, warning that the shortage of trained professionals to fill current vacancies would have serious implications for the quality of patient care (Scanlon, 2001).

The personnel shortages in school psychology and nursing are similar in many ways. Both fields are experiencing increasing demand for trained personnel caused by changing legislation and a growing population while experiencing a supply limited by aging workforce/retirement trends, a shortage of trainers, the vast number of settings professionals may work in (schools, hospitals, academia, etc.), and the range of specialties within each field. However, the shortage in the nursing field differs from that of school psychology in several ways. The first is that of job satisfaction- the field of nursing has experienced a gradual decline in job satisfaction among practitioners over the last 30 years (Sochalski, 2002) while job satisfaction for practicing school psychologists

has been high over the past 15 years, held stable by attractive salaries and flexible schedules (Reschly, 2000).

Another difference, one that may be of most importance, is that of public awareness. Typically, school psychologists work with students with learning disabilities, emotional disorders, or other school-related struggles, which results in only a small proportion of the general public who have contact with a school psychologist during their lifetimes, most of which takes place early in life (during the school-age years). School psychologists tend to fill a gate-keeping role, assessing specific students for special education eligibility, learning disabilities, and/or emotional disturbances, rather than working with entire school populations. Nurses on the other hand provide both crisis care services *and* preventative care services such as annual check-ups and vaccinations, thus serving a greater proportion of the U.S. population.

The difference in awareness of the fields can be seen in the number of training programs in existence today; there are 1,544 nursing programs in the United States (Aiken et al., 2009) while there are only 198 training programs in school psychology (Highley & Carlson, under review). Differences in length of training and marketability may also play a role in interest in the fields. Generally, there are three types of nurse certification programs available- a two-year Associate's degree, a three-year diploma, or a four-year Bachelor's degree (Scanlon, 2001). The ability to finish training and enter the field in a relatively short amount of time and with less debt than school psychology training programs may present nursing as a more marketable profession. More people are likely to enter training that allows them to enter the field quickly and begin making a salary than a field that requires extensive, expensive training prior to entrance. School psychology typically requires at least three years for specialist-level training, and five or more years for a doctorate degree. Furthermore, while the different degree-levels of nurses tends to make only a small difference in the career settings and roles nurses are qualified for, typically only doctoral-level school psychologists are qualified to work in settings outside of schools, thus limiting the options for specialist-level practitioners.

The difference in knowledge of the two fields also manifests in the amount of attention paid to the shortages by the public and private sectors. As is discussed below, there have been numerous studies funded by public and private institutions that focus on

recruitment strategies in the field of nursing, while none have been found in the school psychology literature.

Interventions for the Future of School Psychology

Nursing

The severe shortage of nurses has prompted both the private and public sectors to get involved in finding a solution. Nationally recognized private businesses like Johnson & Johnson and public organizations such as the American Hospital Association (AHA) have begun addressing the inadequate supply via public relations campaigns, advertising spots in national and local media outlets, and by providing funding for smaller organizations to create and pilot other recruitment/retention strategies. As school psychology also suffers from a lack of public awareness, it is likely that the field would benefit from a public relations campaign.

Recruitment strategies in nursing are being implemented on both a large, national scale as well as a small, local scale across the United States. The most noticeable of strategies is that of Johnson & Johnson's $20 million *Campaign for Nursing's Future,* which began in 2010. The company is educating the American public on the career of nursing, as well as attempting to raise interest in nursing as a career option via television and radio advertisements on national broadcast stations, providing informative and promotional materials to high schools across the country, and hosting a website (http://www.discovernursing.com/home) devoted to the career of nursing with resources for those interested in joining the profession (Sochalski, 2002). Much of the information presented via advertisements, promotional materials, and websites focuses on the different roles, settings, and services filled by nurses in an attempt to increase the overall awareness of the field and the options available to those who complete training in the field. No evaluative strategies or results have been reported to date.

On a smaller scale, the American Association of Community and Junior Colleges (AACJC) designed a program where community colleges could create their own recruitment and retention strategies and apply for funding to pilot the programs. Several themes emerged from the strategies proposed: raising interest and awareness via direct hands-on experience in the field of nursing, mentorship of potential applicants by current nursing students, and information sessions geared to increase knowledge of the nursing

field (McKenney, 1991). Of critical importance is the fact that strategies implemented using AACJC funding reported at least 50% success, as measured by participants entering the field or indicating high interest and an expectation of entering the field in the future. Control groups and pre-intervention measures were not included in the report.

The field of nursing has found several effective, evidence-based recruitment strategies that focus on increasing awareness and knowledge of the field and providing the opportunity for hands-on experience. The recruitment strategies currently being used in nursing appear to be effective; over half of individuals targeted by small-scale recruitment strategies enrolled or intended to enroll in nursing courses after participating in the interventions. Of interest to professionals in school psychology, several key aspects or activities were incorporated into a majority of the recruitment strategies reviewed. The first aspect, which appeared to be present in almost every strategy, was that of educating potential applicants about the field itself. The second was that of providing potential applicants with hands-on experience in the field in order to further educate applicants and to interest them in nursing as a career choice.

Theoretical Basis

A person's awareness of a field, measured by factual knowledge of duties, roles, settings, and other characteristics of said field, is relatively easy variable to measure and manipulate. If someone knows very little about a field, simply providing that individual access to information about the field is likely to increase his or her level of knowledge. This strategy is seen in the nursing shortage literature and appears to be effective- many individuals who attended educational sessions provided by nursing colleges indicated a higher level of knowledge about the allied health field and a higher likelihood of entering the field. Furthermore, this higher level of knowledge was indicated prior to the implementation of the media campaign discussed above, and the media campaign likely will further increase factual knowledge of the field by providing easily-accessible information on nursing to the general public.

Hands-on experiences and the development of relationships with individuals currently in the field of nursing (such as apprenticeships with nursing students) cultivated interest in nursing as a career in several studies (McKenney, 1991; Sochalski, 2002). The use of hands-on experiences is also theoretically supported by David Kolb's Experiential

Learning Theory (ELT), which draws on the work of prominent twentieth century researchers and scholars Jean Piaget, Erik Erikson, and others. ELT, as the name implies, gives *experience* a central role in learning and development (Kolb & Kolb, 2005).

ELT may also help explain why some participants chose to enroll in nursing programs while others, who had been involved in the same recruitment program, did not. ELT consists of four learning styles, based on an individual's tendency to use specific steps in the learning cycle, that influence what fields that individual will likely be interested in. Kolb described the learning cycle as having four stages: 1) concrete experience, 2) reflective observation, 3) abstract conceptualization, and 4) active experimentation (Kolb, 1984). The tendency of an individual to utilize these steps is thought to reflect their learning style and thus what experiences are likely to be pertinent to them. The ratio of stage usage culminates in four learning styles: diverging, assimilating, converging, and accommodating. The use of each stage is measured by the 12-item *Learning-Style Inventory* (See Appendix A), which asks individuals to rank the ends of given sentences based on how well the individual believes the ending fits with their learning preferences. Each ending is thought to pull from a different stage, and the scores for endings related to the four stages are summed to produce four scores. These scores are then mapped on to the Kolb Learning Cycle grid, and the quadrant where the scores meet indicates which learning style the individual prefers (Kolb, 1993).

People with *diverging* learning styles use concrete experience and reflective observation, are thought to have broad cultural interests, enjoy gathering information and interacting with people, and listen with an open mind to different points of view. People with this learning style tend to excel at brainstorming ideas, working in groups, and gathering information. *Assimilating* learners use abstract conceptualization and reflective observation most often, and are thought to be interested in abstract concepts, often choosing theory over practice. These learners tend to prefer readings and lectures, and work best when given time to think things through in a logical fashion. *Converging* learners uses abstract conceptualization and active experimentation, often preferring to work with technical tasks rather than interpersonal issues and excelling in problem solving tasks, simulated experiences, and laboratory tasks. The final learning style, *accommodating*, is characterized by concrete experience and active experimentation, and

individuals with this learning style tend to seek out and excel in hands-on experiences, preferring to work in the field rather than using theories (Kolb & Kolb, 2005).

Of interest to recruiters in school psychology, Kolb found that the career of educational psychologist was most closely aligned with the accommodating learning style (See Appendix B), attracting practitioners who prefer fieldwork and learn from hands-on experience (Kolb, 1981). Kolb has also suggested that the overarching disciplines of humanities and social science are based in concrete experience and reflective observation, or the diverging learning style (Svinicki & Dixon, 2003), further supporting the incorporation of experiential, or hands-on, learning opportunities in to any recruitment strategy used in school psychology.

Two important studies provide support for hands-on experiences in raising interest in the field of school psychology. As discussed previously, Gilman and Handwerk (2001) conducted a survey of college students measuring levels of knowledge of, and interest in, several disciplines within psychology, with a focus on school psychology. Focusing on students already participating in graduate training in school psychology, Highley and Carlson (under review) surveyed graduate students, focusing on how they learned about the field as a career choice, and what elements influenced participants to enter graduate programs.

Gilman and Handwerk (2001) found that the mean knowledge rating for school psychology was only "somewhat knowledgeable" , between a Likert-scale score of two and three, indicating that undergraduates reported having only a cursory understanding of school psychology. Of interest was the finding that participants indicated learning about school psychology mostly through direct contact with a practicing school psychologist, which may be an important piece to include in future recruitment strategies. Results of the survey also suggested that interest in school psychology as a career choice was very low among college students. Only 4% of education majors and 12% of psychology majors intended to apply to a school psychology graduate program as their first or second choice, compared to 44% for clinical psychology and 39% for counseling psychology. Of note, over 50% of the students who intended to apply to clinical psychology graduate programs cited working with children and families, the key population served by school

psychologists, as the specific reason for choosing clinical psychology (Handwerk & Gilman, 2001).

Handwerk and Gilman concluded that, based on the results of the survey, several recruitment strategies that fit with specific learning styles should be implemented. As school psychologists tend to have accommodating learning styles and prefer hands-on experiences, the first of the strategies involved making fieldwork available to undergraduate students. The authors suggested that to increase awareness and interest, recruiters needed *to provide opportunities for direct, experiential contact with practitioners to address both the lack of awareness of the duties and roles school psychologists fill, as well as to increase interest in the field*. They also suggested opportunities to shadow practitioners or school psychology graduate students would also increase interest in the field.

Highley and Carlson (under review) also found that hands-on experiences influenced the interest level of current school psychology graduate students. The authors developed a survey and sent it to the program directors of every American Psychological Association accredited or National Association of School Psychologists approved graduate program in the United States. A total of 884 valid responses were used in the analysis, representing 38 of the 45 states that house accredited/approved school psychology training programs. Descriptive statistics were used to analyze demographic data, while open-ended responses to items addressing previous experiences and school psychology information sources were coded for themes and reported as frequencies.

Results of the survey indicated that hands-on experiences relevant to school psychology were prevalent among current graduate students. A large majority of respondents reported being involved in experiences such as volunteering, working in an after-school program, or working in a parallel field such as teaching. The authors suggest that providing opportunities for undergraduate students to have interaction with school psychologists and hands-on experiences may increase the number of individuals entering training programs (Highley & Carlson, under review).

Research on the causes, consequences, and possible solutions to the shortage of nurses, discussion of causes and recommended recruitment strategies in school psychology, and the supporting theoretical framework of Experiential Learning Theory,

come together to inform the creation of effective strategies to address the shortage of school psychologists. Direct and purposeful education of potential applicants about school psychology, proven effective in nursing, is one key aspect of an effective recruitment strategy. Increasing interest in school psychology as a career choice via experiential, hands-on experiences, is another key aspect; evidence from the implementation of such experiences in the field of nursing suggests this aspect is effective in increasing enrollment in training, and is theoretically supported by ELT. ELT further identifies two types of learning styles that are likely to be interested in school psychology when given the above experiences- divergers and accommodators. These ideas can collectively inform an effective recruitment strategy to raise interest in the field of school psychology as a career choice.

Chapter Three: Proposed Research Study

Problem Statement

Throughout its history, school psychology has faced high demand for its services, with only small numbers of professionals capable of handling those demands. While the shortage of school psychologists is caused and continued by numerous factors, the lack of knowledge and consequent interest in the field may be of critical importance. If the largest pool of potential graduate students (college students) is unaware of the field and/or uninterested in school psychology as a possible career choice (Gilman & Handwerk, 2001), is it any wonder that the field is unable to raise the supply to meet demand?

Statement of Purpose

The purpose of the proposed study is to explore possible interventions aimed at educating college students about the roles, services, settings, and job outlooks for school psychologists. More specifically, the proposed study aims to test what type of educational activity- didactic information presentation versus didactic information presentation with an added experiential learning task- interacts with which learning style to produce the greatest gains in interest in the field as a graduate school option. Further, the proposed study seeks to determine the relationship between knowledge about school psychology and the level of interest in the field among participants.

To explore these questions, the proposed study will utilize stratified random sampling to evaluate outcome measures, where participants will be grouped based on their learning style, and then randomly assigned to one of three conditions: 1) Didactic information presentation (DIP), 2) Didactic information presentation and experiential learning activity (DIP+), or 3) Control condition. Intervention effects will be evaluated by changes in interest in school psychology as a graduate school choice, measured pre-treatment, immediately post-treatment, and one semester following the end of treatment. Long-term effects of treatment will be measured over the course of four years from the end of treatment, with brief questionnaires sent out yearly. Analyses will test for gains in interest, differences in gains due to treatment condition, and differences in gains due to the interaction of learning style and educational activity (treatment condition).

Research Questions and Hypothesis

Research Question 1a & b- (a) Does the amount of knowledge about school psychology affect the level of interest in the field as a graduate school choice among college psychology and education majors? What is the relationship between amount of knowledge and interest level? (b) Does educating college students about the field of school psychology increase their interest in the field?

Hypothesis 1a & b- It is hypothesized that there will be a moderate to strong positive relationship between depth of knowledge about school psychology and amount of interest in the field. It is expected that individuals with a deeper knowledge of the roles, settings, and duties of a school psychologist will, in general, have a higher interest level in the field than those who know little to nothing about different aspects of the profession. It is also expected that as amount of knowledge increases through educational activities, so too will level of interest.

Rationale for Hypothesis 1 a & b- Prior research on undergraduates' perception of school psychology has found that they generally have only a cursory understanding of what school psychology is and what roles, services, settings, and duties school psychologists fill (Gilman & Handwerk, 2001). This lack of knowledge likely plays a large part in the low interest in the field; one is unlikely to be interested in a field one knows little to nothing about. Therefore, it is argued that by increasing the amount of knowledge, interest level is likely to increase as well.

Research Question 1c- Are gains in interest in school psychology differentially influenced by the type of educational activity (treatment) participants are involved in?

Hypothesis 1c- It is hypothesized that participants in the DIP+ treatment group will evidence the greatest gains in interest when measured immediately post-treatment, and that these gains will be significantly higher than those made by the DIP and control groups.

Rationale for Hypothesis 1c-The use of field experiences, including shadowing practitioners and working in related fields, has proven effective in increasing recruitment outcomes in nursing, and has been linked to increased interest in school psychology as well (Highley & Carlson, under review). While didactic information presentation may

increase interest levels in that it educates individuals who may not have been familiar with the field, experiential learning has been found to be a key influence on interest levels.

Research Question 2a- If interest levels increase after participation in the treatment groups, is that increased interest still significant at one month post-treatment? Are maintained interest gains at follow-up influenced by treatment condition?

Hypothesis 2a- It is hypothesized that gains in interest in school psychology will be maintained at the one-semester follow-up measurement time, and that participants in the experiential learning (DIP+) condition will evidence higher maintained interest levels at follow-up than will participants in the didactic information presentation (DIP) and control conditions.

Rationale for Hypothesis 2a- Knowledge about the various psychological disciplines in general, and school psychology in particular, increases as college students advance through college (Gilman & Handwerk, 2001). Following participation in the treatment groups, it is likely that participants will have at least a base knowledge about what school psychologists do; as participants continue through their degree tracks, this base knowledge will likely be built upon, thus maintaining and possibly increasing the amount of knowledge participants have about school psychology. As it is hypothesized that interest increases as knowledge increases, this continually increasing knowledge level will likely result in a maintained or increased level of interest at follow-up. It is also possible that interest level may be noticeably higher in the control group at the one-month follow up measurement, as they may come in contact with information about the field as they continue through their educational tracks.

Research Question 3a-What are the most common learning styles among college education and psychology majors?

Hypothesis 3a- It is hypothesized that a majority of education and psychology majors will have an accommodating learning style. It is further hypothesized that the second most utilized learning style will be that of divergers.

Rationale for Hypothesis 3a- As the treatments in this study involve educating participants, it is important to understand the types of learning styles that participants may have. Research has shown that the fields of education and psychology tend to attract

individuals with accommodating or diverging learning styles (Kolb, 1976) and that the field of educational psychology, under which school psychology falls under, is also comprised mostly by learners with the accommodating learning style. Thus it is logical to assume that if participants are recruited from educational and psychology fields of study, it is likely that a majority of participants will utilize an accommodating learning style.

Research Question 3b-Does participant learning style interact with type of educational activity to produce differential gains in interest in school psychology?

Hypothesis 3b-It is hypothesized that learning style will interact with type of educational activity to produce differences in interest gains across learning styles. It is expected that participants with accommodating learning style in the DIP+ treatment group will evidence the greatest gains in interest level as measured immediately post-treatment.

Rationale for Hypothesis 3b-According to Kolb's Experiential Learning Theory, individuals who utilize an accommodating learning style prefer to work in the field and are likely to learn best from hands-on experiences (Kolb & Kolb, 2005). Individuals with a tactile, experience-based learning style tend to absorb more information and feel more comfortable with knowledge and skills gained through active educational activities. Thus, it is likely that individuals with accommodating learning style will learn and understand more about the facets of school psychology and thus become more interested in the field following an experience-based learning activity than would an individual with a different learning style. Further, previous research has found that individuals currently enrolled in school psychology graduate school programs (indicating a strong interest in the field as a career choice) became interested in the field following direct interaction with a practicing school psychologist or other experiential learning situation. Thus, individuals with accommodating learning style will likely evidence the greatest gains in interest level after gaining hands-on experience and evidence less of a gain when only provided a didactic educational experience. It is also possible that participants who have a different learning style may evidence greater gains after being provided the didactic educational experience than would someone with accommodating learning style.

Method

Participants

The proposed study will seek participants in two American Psychological Association (APA) accredited school psychology programs housed in Texas universities. As research has found geographical proximity to be a key element to successful site recruitment and retention, only these geographically close universities will be included in this study. A sample of 150 college psychology and education majors at each university will be recruited and, once consent from the participant has been given, participants' learning styles will be assessed. Stratified random sampling will be utilized in order to assign participants within each learning style category randomly into treatment conditions. These intervention groups include: 1) DIP- didactic presentation of information about school psychology as a field, the roles and settings in which school psychologists can work, and the likely job outlook for practitioners in various settings, 2) DIP+- same didactic presentation with an added experiential learning activity involving watching a video that shows a school psychologist performing several duties in different settings as well as a question and answer session with two school psychologists; one who works in a public school setting and one who works in private practice, and 3) control- participants will complete all measures but receive no intervention. Participants will be eligible for the study if they are currently majoring in education or psychology, are in their second to fourth year of college, and consent to participate in the study.

Treatments

Didactic Information Presentation (DIP). Participants assigned to the DIP intervention condition will attend a presentation on the roles, duties, and career settings available to school psychologists, as well as job benefits, how to apply for graduate school, and where to find more information on the field. The presentation will consist of a 45-minute PowerPoint presentation with accompanying FAQ handout (See Appendix E) presented by the Principal Investigator. The presentation will be created based on information provided by the APA Division 16 website and relevant, recently published research discussing the current state of the field.

Didactic Information Presentation and Experiential Learning Experience (DIP+). Participants assigned to the DIP+ intervention will also attend the presentation described

above, presented by the Principal Investigator. Following the presentation, participants will be presented with a documentary-style video showcasing a school psychologist performing several roles and duties common among practitioners, including assessment, IEP or ARD meetings, therapy sessions, and while consulting with other school professionals. Only children and adults who have given consent/assent for filming and for use of the video for this study will be included in the documentary.

Following the documentary, participants will meet two practicing school psychologists and be given the opportunity to ask any questions they have about the field. One school psychologist will come from a public school setting while the other will come from private practice so different viewpoints and knowledge bases can be available to the participants.

Control. Participants assigned to the control group will complete the same measures as the intervention conditions but will receive no treatment.

Measures

Demographic Information. Prior to the intervention, all participants will complete a brief demographic questionnaire, including items on age, gender, ethnicity, and major.

Learning Style Inventory. *The Kolb Learning Style Inventory* (Kolb & Kolb, 2005) is a 12-item measure designed to identify the way individuals learn from experience. The format, items, and scoring procedures are designed to adhere to the standards of testing developed by the American Educational Research Association (AERA), the APA, and the National Council on Measurement in Education (NCME). The LSI requires participants to rank the endings of a provided sentence based on their learning preferences (See Appendix A)**.** For example, the first item of the inventory begins with: *When I learn:* and possible completions are: *A) I like to deal with my feelings, B) I like to think about ideas, C) I like to be doing things,* and *D) I like to watch and listen.* Participants rank order the endings based on their preferences. Each letter option corresponds to a different learning strategy, and the rank given to each letter in the learning strategy is summed to create a composite score for each strategy. These scores are then plotted on a graph (See Appendix D) to determine which learning style best suites the individual (Kolb, 1993).

Normative scores for the LSI are based on 6,977 users with an age range of 17-75 years old. The sample included college students and working adults from a wide range of career fields. Internal consistency reliability, as measured by Cronbach's alpha, was reported for seven randomized studies. These studies reported coefficients in the moderate range, from .52 to .84 across numerous studies, while test-retest reliability correlations were well above .9 in most studies (Kolb & Kolb, 2005). External validity, as measured by correlations between the LSI and other measures reported to measure the same constructs, appears high. For example, the Adaptive Style Inventory (ASI), measures flexibility in learning and the correlations between the two measures indicates moderate concurrent validity, ranging from .37 to .53 across the different learning styles.

Knowledge and Interest. The *Undergraduate Psychology Information Inventory* (Gilman & Handwerk, 2001) is a scale developed specifically to measure undergraduate students' level of knowledge and interest in various psychological disciplines (See Appendix C). The survey measures knowledge and interest in several psychological disciplines. Content validity was assessed by sending the scale to a variety of professionals across psychology disciplines and incorporating their feedback and corrections into a revised version (Gilman & Handwerk, 2001). The proposed study will use two sections of the UPII, one to measure knowledge of school psychology, and one to measure interest in school psychology as a graduate school option.

Items four and five on the UPII are designed to measure knowledge about various psychological disciplines. The questionnaire presents participants with a list of five professional duties associated with various disciplines (i.e. individual therapy, assessment, etc.) and asks participants to indicate which duties each of the listed disciplines require. Following this, item five lists brief vignettes of different problems and asks participants to choose which psychological discipline is most appropriate. To obtain an overall knowledge score, participants' scores relating to school psychology in section four (up to five points) and five (up to two points) are combined for an overall top knowledge score of seven points. Item three of the UPII asks participants if they plan to apply to graduate school in a psychological discipline and to rank-order up to three disciplines they would be interested in applying for. Interest scores range from 0 to 4, with 0 indicating the participant does not intend to apply for graduate school and four

indicating the participant ranked school psychology as their first choice of graduate program. The UPII will be used as a research measure; at this time there is no evidence of reliability. To address this, test-retest correlations will be calculated and reported from the control group in this study.

Procedures

Approval by Human Subjects Committee: This study will be conducted in compliance with standards designated by the American Psychological Association and the University of Texas at Austin. The principal investigator will secure approval from the Institutional Review Board at the University of Texas at Austin prior to beginning the study.

Approval by University: The principal investigator will provide a written proposal to the deans of the education and psychology department at both universities requesting approval to conduct research on the selected campuses. Once permission is granted, the principal investigator will meet with school psychology graduate students at each university to discuss the proposed study, seek a graduate research assistant (GRA) within each university's training program to collect data, and to discuss responsibilities of said GRAs. Following selection of GRAs, the principal investigator will provide each GRA with the measures to be given pre-, post-, and one-semester following treatment. GRAs will be expected to administer the assessments while the principal investigator will lead the didactic information sessions to ensure consistency.

Recruitment of Participants: Upon approval of the study by both the Institutional Review Board and deans at both universities, recruitment of participants will begin. Using departmental listservs, education and psychology majors will be sent an e-mail informing them of their eligibility to participate and an invitation to join the study. E-mails will also be sent to professors of eligible participants to request they make an announcement to their classes about the study, and to provide eligible students with contact information for the research team. Fliers informing possible participants about the study opportunity will also be posted in the education and psychology departments on each campus.

Data collection: Participants will be assigned a random identification number at the beginning of the study. This number will be used on subsequent measures to ensure

confidentiality; only the Principal Investigator will have access to any identifying information on participants, and this information will remain password protected at all times.

Regardless of treatment condition, all participants will complete the Demographics Survey, Learning Style Inventory, and the Undergraduate Psychology Information Inventory at baseline. All participants will again complete the UPII immediately after the intervention, and one semester post-treatment. Measures will be administered by GRAs who will be blind to treatment condition. All measures will be administered in a group setting.

Data Analysis and Expected Results

Preliminary Analysis

To ensure the general assumptions of multivariate statistical testing, the assumptions of normality, linearity, and homoscedasticity will be tested. Descriptive statistics and the Normal Q-Q plot will be examined to validate the normality assumption for all of the statistical procedures used. To validate the assumptions underlying ANCOVA, Box's test will be used to address equal variances, while the *F*-test will be examined to determine if regression slopes are homogeneous. If the *F*-test is significant, the ANCOVA will not be conducted. Of concern in the regression analyses is the issue of multicollinearity. To address the possibility of high intercorrelations among variables, the correlation matrix will be examined for moderate to high correlation values, and the values of tolerance and the variance inflation factor (VIF) will be studied. If multicollinearity is present, highly correlated variables may be combined or deleted (Mertler & Vannatta, 2005). Universities will be analyzed as separate entities initially- if there are no significant between-group differences, data will be combined and analyzed as one total sample. If significant between-group differences are detected, data will be analyzed and reported at the university level.

A power analysis was conducted using G*Power software, version 3.1, to determine the number of participants required to achieve a power of .8 with a significance level of .05. The Institute for Educational Sciences defines the minimum effect size, or the smallest positive value at or above which the effect is deemed substantively important, as greater than or equal to 0.25 for randomized trials (WWC,

2008). Despite the 0.25 level being considered a small effect size, it was used in the power analysis upon the recommendation of the IES. Power analyses were conducted for the repeated measures ANCOVA and sequential regression; repeated measures ANCOVA required the largest total sample size at *N*=108. Attrition is a threat to statistical power, so sample sizes of 150 at both universities will be collected to guard against loss of power due to attrition. As it is unknown until data analysis whether the samples from each university are comparable, each sample will be treated as independent from one another.

Analysis and Expected Results

Hypotheses 1a & b- - It is hypothesized that there will be a moderate to strong positive relationship between depth of knowledge about school psychology and amount of interest in the field. It is expected that individuals with a deeper knowledge of the roles, settings, and duties of a school psychologist will, in general, have a higher interest level in the field than those who know little to nothing about different aspects of the profession. It is also expected that as amount of knowledge increases through educational activities, so too will level of interest.

Data Analysis for Hypotheses 1 a & b-To explore the relationship between knowledge and interest levels, bivariate correlation will be used to measure the association between the two variables. A two-group ANCOVA will be utilized to determine the effects of being in a treatment group on changes in interest level, with pre-test interest held as the covariate and the between-subjects factor as the treatment (dummy coded 1 for either treatment group) and control (coded 0).

Hypothesis 1c- It is hypothesized that participants in the DIP+ treatment group will evidence the greatest gains in interest when measured immediately post-treatment, and that these gains will be significantly higher than those made by the DIP and control groups.

Data Analysis for Hypothesis 1c-To analyze hypothesis two, a three-way ANCOVA will be conducted. To explore the effects of the different treatments on interest level at post-treatment, pre-test interest will be held as the covariate, while treatment condition will be the between-subjects factor. Barring a significant interaction, main effects and effect sizes for each group will be compared and interpreted.

Hypothesis 2a It is hypothesized that gains in interest in school psychology will be maintained at the one-semester follow-up measurement time, and that participants in the experiential learning (DIP+) condition will evidence higher maintained interest levels at follow-up than will participants in the didactic information presentation (DIP) and control conditions.

Data Analysis for Hypothesis 2a- Repeated-measures ANCOVA will be utilized to explore whether gains are maintained over time. Pre-treatment interest level will be held as the covariate, the between-subjects factor will remain as treatment group, and the time periods measured will be immediately following treatment (Time 1) and one-semester following treatment (Time 2).

Hypothesis 3a- It is hypothesized that a majority of education and psychology majors will have an accommodating learning style. It is further hypothesized that the second most utilized learning style will be that of divergers.

Data Analysis for Hypothesis 3a- Descriptive statistics will be used to explore the frequencies of the four learning styles.

Hypothesis 3b-It is hypothesized that learning style will interact with type of educational activity to produce differences in interest gains across learning styles. It is expected that participants with accommodating learning style in the DIP+ treatment group will evidence the greatest gains in interest level as measured immediately post-treatment.

Data Analysis for Hypothesis 3b- To analyze hypothesis 3b, post-test interest level score will be regressed on background variables (year in school, major), pre-treatment interest level, and treatment condition sequentially. The order of entry for variables will be based on time sequence (Keith, 2006). To obtain a measure of the unique variance, the regression will be conducted a second time, with learning style entered last into the regression equation (Kieth, 2006). The model summary, ANOVA table, and table of coefficients will be analyzed.

Chapter Four: Discussion

Summary and Limitations

The proposed study is intended to determine if amount of knowledge about the field of school psychology is related to the level of interest in the field. The proposed study is also intended to determine if type of learning style interacts with type of educational experiences to differentially effect gains in interest level in school psychology among college students majoring in education or psychology. It is expected that educational experiences in the field will result in gains in interest in school psychology as a career field, and hands-on learning experience will result in greater gains than information presentation alone for certain learners. It is also expected that the gains in knowledge and interest will be mediated by an individual's learning style and treatment condition.

Several major limitations are present in the study. Firstly, there are several ethical considerations that limit the Didactic Information Presentation with experiential learning component (DIP+) treatment condition. Children, families, and school personnel involved in many of the activities performed by school psychologists are promised a certain level of confidentiality of communication between themselves and the school psychologist. As the DIP+ treatment condition proposes to shadow a practicing school psychologist through several roles involving students and families, the activities the video can actually record are limited. The study proposes to follow a practitioner through a portion of an assessment, a therapy session, and an ARD or IEP, all of which place a high priority on confidentiality.

To address the concern of confidentiality, all efforts will be made to maintain the privacy of participants involved. For instance, the portion of the videotape showing the school psychologist involved in an assessment will involve a child volunteer who has been informed of the purpose of the activity and the film, and has completed an assent form. A full assessment will not be completed, and while the protocol the assessment was recorded on will be passed around to participants in this treatment group, no identifying information will be recorded. The assessment will be of intelligence, not of behavioral or emotional characteristics. The portion of the documentary that follows the school psychologist during a therapy will involve a group therapy session working on social

skills. This type of therapy session tends to be open to any students in a school, and is less likely to be intensive or distressing. Similar to the participants in the assessment portion of the video, only children who have assented (and whose parents have consented) to the taping and whose parents have completed an informed consent form will be filmed. Similarly, the ARD or IEP that is featured in the documentary will only feature individuals who have consented in writing to be videotaped.

The ethical issues that are presented when providing participants with a hands-on learning experience limit what activities and settings can be included in the treatment condition. Hospital settings, residential treatment settings, and other settings school psychologists work in are not practical for the video, nor are assessments of mental retardation, emotional disorders, or physical disabilities, as these assessments can be highly sensitive and distressing for not only the child and parent involved, but also for the treatment group participants. As this study aims to provide only an introductory-level education about school psychology, more intensive duties and settings are likely unnecessary to achieve this goal.

Another limitation of the study design is the possibility of confounding variables. It may be the case that differences in interest level immediately post-treatment are not solely influenced by the type of educational activity the participant was involved in, but also the sheer amount of time spent in the activity. Said another way, it is possible that larger gains in level of interest among participants in the didactic information presentation with the documentary and question and answer session may actually be more strongly related to the amount of time spent in the activity than the activity itself.

One limitation of the data analysis utilized in this study is the possible presence of uncontrolled variables. While several possible influences on interest level have been included in the research design, it is possible that there are other influences unaccounted for, such as prior experience with school psychology (Gilman & Handwerk, 2001). Thus, it is possible that part of the relationship between treatment and post-treatment interest levels may be caused in part by uncontrolled-for variables. However, randomization of samples may alleviate problems caused by timing, as both groups should be nearly equivalent in all areas prior to treatment.

There are several limitations of the measures proposed in this study. The Learning Style Inventory and the Undergraduate Psychology Information Inventory are both self-report measures and are dependent on the point of view of the student. Further, the validity and reliability of the UPII have not been tested; future studies should focus on these constructs to validate the use of the UPII for measuring the constructs included in the measure. Due to the lack of evidence supporting the validity and reliability of the UPII, it may be helpful to administer more than one measure per construct (i.e. a measure of knowledge and/or interest with evidence supporting its validity).

The proposed data collection timeline may also prove to be limiting in the usability of the data. This study proposes to collect data pre- and immediately post-treatment, followed by a follow-up collection point one semester after the treatment has ended. This study also proposes to collect data annually for four consecutive years, which will likely lead to missing data as participants move, decline to fill out surveys, or otherwise do not report in annually. Missing data will be analyzed for patterns and will be treated and reported accordingly.

Implications and Future Research

It is hoped that the proposed study will illuminate several strategies for increasing the supply of trained professionals entering the field of school psychology. To date, very little has been reported in terms of effective interventions, nor what audiences to target for these strategies; this study proposes to explore once such avenue. Results of this study may illuminate the prime target for further efforts to increase the supply pipeline in school psychology. Results may also provide insight into the learning strategies education and psychology majors utilize, and what types of education activities should be utilized when working with this population.

Future research should focus on ways to expand the treatments proposed in this study to include various other specialties and fields contained within psychology and education. As there is a severe shortage of highly qualified teachers, it may be important to adapt the treatments described above to most effectively influence the interest level of students contemplating pursuing a career in education.

If the proposed study results in significant increases in interest in school psychology, it may be beneficial for future research to expand the intervention into other

states and schools, as well as including other majors into treatment groups. As interest in Master's-level versus Doctoral-level studies was not addressed specifically in this study, another avenue of research may be analyzing the intervention to determine if one level attracts more interest over another. If a pattern of interest is found, future studies can expand on those differences and may be tailored to attract specific targets.

As hands-on experiences are limited due to ethical considerations, future research should focus on smaller treatment groups completing a more in-depth experiential learning activity, such as shadowing a practicing school psychologist or interning with a practitioner as part of an undergraduate practicum course. Taking this a step further, it may benefit the field to begin to collect and save videos such as the one described above and make them available on school psychology websites and high school or college career centers for individuals to view on their own.

It may also be beneficial if current school psychologists begin to advocate for the inclusion of the field in introductory courses in education or psychology, so students can build on a base knowledge of the field from semester one.

Appendices

Appendix A
The Learning-Style Inventory (LSI)

LEARNING-STYLE INVENTORY

The Learning-Style Inventory describes the way you learn and how you deal with ideas and day-to-day situations in your life. Below are 12 sentences with a choice of endings. Rank the endings for each sentence according to how well you think each one fits with how you would go about learning something. Try to recall some recent situations where you had to learn something new, perhaps in your job or at school. Then, using the spaces provided, rank a "4" for the sentence ending that describes how you learn *best*, down to "1" for the sentence ending that seems *least* like the way you learn. Be sure to rank all the endings to each sentence unit. Please do not make ties.

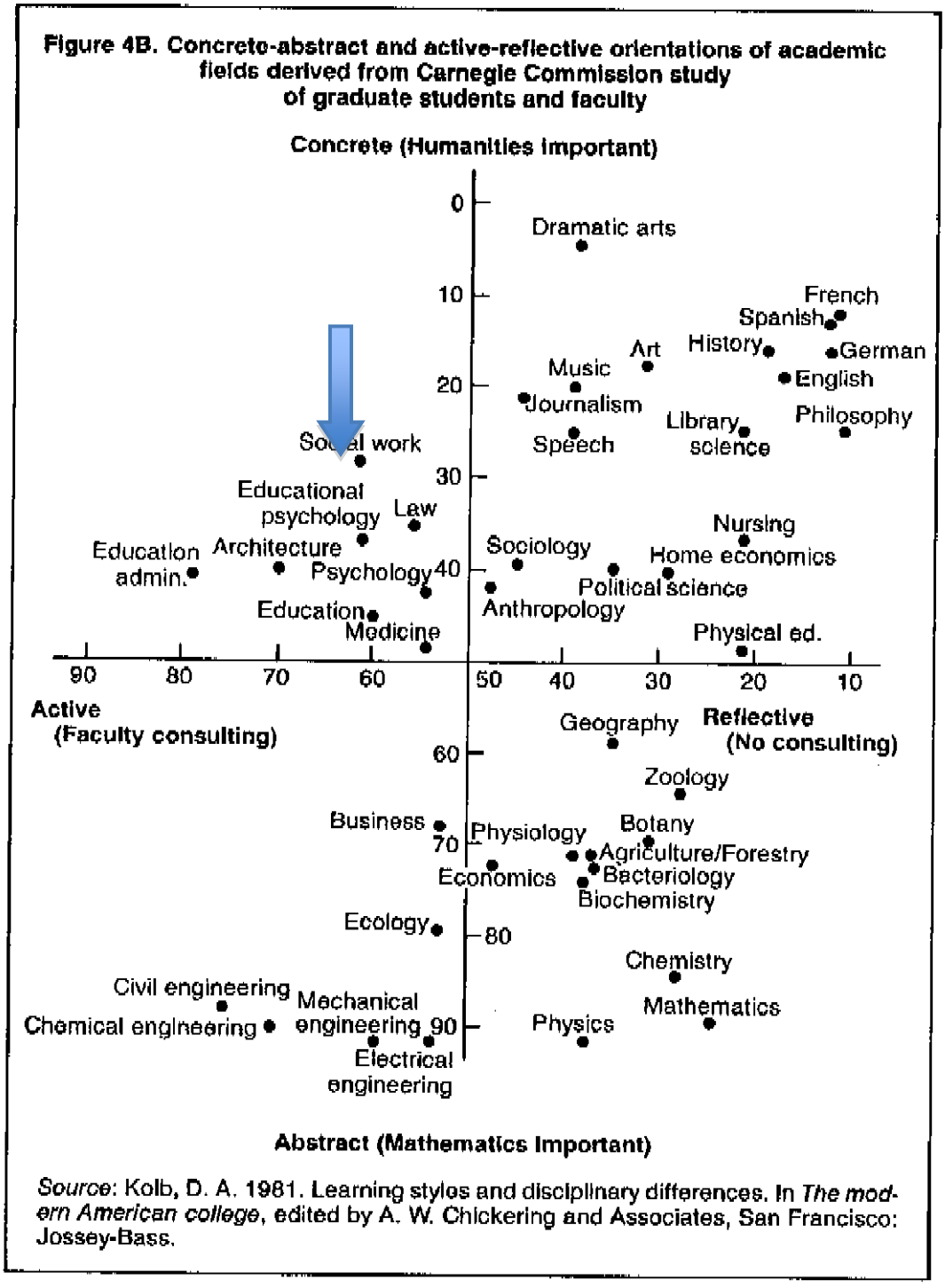
Example of completed sentence set:

1. When I learn: 2 I am happy. 1 I am fast. 3 I am logical. 4 I am careful.

Remember: 4 = *most* like you 3 = *second most* like you 2 = *third most* like you 1 = *least* like you

	A		B		C		D	
1. **When I learn:**	___	I like to deal with my feelings	___	I like to think about ideas.	___	I like to be doing things.	___	I like to watch and listen.
2. **I learn best when:**	___	I listen and watch carefully	___	I rely on logical thinking	___	I trust my hunches and feelings.	___	I work hard to get things done.
3. **When I am learning:**	___	I tend to reason things out.	___	I am responsible about things.	___	I am quiet and reserved.	___	I have strong feelings and reactions.
4. **I learn by:**	___	feeling.	___	doing.	___	watching.	___	thinking.
5. **When I learn:**	___	I am open to new experiences.	___	I look at all sides of issues.	___	I like to analyze things, break them down into their parts.	___	I like to try things out.
6. **When I am learning:**	___	I am an observing person	___	I am an active person.	___	I am an intuitive person.	___	I am a logical person.
7. **I learn best from:**	___	observation.	___	personal relationships.	___	rational theories.	___	a chance to try out and practice.
8. **When I learn:**	___	I like to see results from my work.	___	I like ideas and theories.	___	I take my time before acting.	___	I feel personally involved in things.
9. **I learn best when:**	___	I rely on my observations.	___	I rely on my feelings.	___	I can try things out for myself.	___	I rely on my ideas.
10. **When I am learning:**	___	I am a reserved person.	___	I am an accepting person.	___	I am a responsible person.	___	I am a rational person.
11. **When I learn:**	___	I get involved.	___	I like to observe.	___	I evaluate things.	___	I like to be active.
12. **I learn best when:**	___	I analyze ideas.	___	I am receptive and open-minded.	___	I am careful.	___	I am practical.

Appendix B
Learning-Style Map



Source: Kolb, D. A. 1981. Learning styles and disciplinary differences. In *The modern American college*, edited by A. W. Chickering and Associates, San Francisco: Jossey-Bass.

Appendix C
Undergraduate Psychology Information Inventory

Undergraduate Psychology Information Inventory

College/University:_____ Course #: _____ Instructor: _____

Major: _____ Gender: _____ Age: _____ Race: _____

Year (circle one): Freshman Sophomore Junior Senior

Have you taken any other psychology class? Yes No

Directions: We would like to know about your knowledge of various disciplines within psychology. Please be as honest as possible and do not discuss your answers with anyone while completing this inventory. This is NOT a test. Your answers will not affect your grades in any way, and no one will be told your answers.

1. How knowledgeable are you about the following psychological disciplines?
no knowledge somewhat knowledgeable pretty knowledgeable extremely knowledgeable
1 2 3 4

					Briefly describe the duties of the following disciplines
Clinical	1	2	3	4	
Counseling	1	2	3	4	
Developmental	1	2	3	4	
Educational	1	2	3	4	
Experimental	1	2	3	4	
Industrial/Organizational	1	2	3	4	
Neuropsychology	1	2	3	4	

School	1	2	3	4
Social	1	2	3	4
Sport	1	2	3	4

2. Please circle the source(s) that you <u>primarily</u> use to learn about the following disciplines. (NOTE: you may circle more than one if applicable).

Instructors 1 | Books/ magazines 2 | Journals 3 | Television/ movies 4 | Friends/ family 5 | Employment 6 | Organizations 7 | Course Textbook 8 | Personal experience 9 | Internet 10 | Professional

Clinical	1	2	3	4	5	6	7	8	9	10 unfamiliar
Counseling	1	2	3	4	5	6	7	8	9	10 unfamiliar
Developmental	1	2	3	4	5	6	7	8	9	10 unfamiliar
Educational	1	2	3	4	5	6	7	8	9	10 unfamiliar
Experimental	1	2	3	4	5	6	7	8	9	10 unfamiliar
Industrial/Organizational	1	2	3	4	5	6	7	8	9	10 unfamiliar
Neuropsychology	1	2	3	4	5	6	7	8	9	10 unfamiliar
School	1	2	3	4	5	6	7	8	9	10 unfamiliar
Social	1	2	3	4	5	6	7	8	9	10 unfamiliar
Sport	1	2	3	4	5	6	7	8	9	10 unfamiliar

3. Do you plan to apply to a graduate program in psychology? Yes No

If 'yes', list the discipline(s) that you wish to apply (NOTE: you may write more than one, but please list in order).

Discipline **Why did you choose this discipline?**

1. _____
_____
2. _____
_____
3. _____
_____

4. Check which roles the following disciplines perform:

	Individual Therapy	Group Therapy	Assessment	Consultation	Research
Clinical	_____	_____	_____	_____	_____
Counseling	_____	_____	_____	_____	_____
Developmental	_____	_____	_____	_____	_____
Educational	_____	_____	_____	_____	_____
Experimental	_____	_____	_____	_____	_____
Industrial/ Organizational	_____	_____	_____	_____	_____
Neuropsychology	_____	_____	_____	_____	_____
School	_____	_____	_____	_____	_____
Social	_____	_____	_____	_____	_____
Sport	_____	_____	_____	_____	_____

5. In the following section, a number of case studies have been formulated that are specific to a particular psychological discipline. For each case study, circle the discipline that is MOST applicable.

a. Tom is a 35 year old male who feels the need to repeatedly wash his hands over and over again. He wishes to visit with someone in order to help him control this condition.

Clinical Educational Experimental Developmental Industrial/Org. Neuropsychology School Social Sport

b. Last month, Mark was in a major car accident. Now, Mark is having difficulty speaking. The health care professional wishes to have Mark examined by a specialist in psychology to determine where the damage may have occurred.

Clinical Educational Experimental Developmental Industrial/Org. Neuropsychology School Social Sport

c. Angela is a 16 year old high school student who is giving her teacher a difficult time. Specifically, Angela continues to fight with her classmates, is verbally abusive towards the teacher, and is not doing her homework. Angela's teacher, who believes that the behaviors stem from problems at home, wishes to have Angela visit with someone.

Clinical Educational Experimental Developmental Industrial/Org. Neuropsychology School Social Sport

d. Marsha, who works in a laboratory, is interested in determining how people see color.

Clinical Educational Experimental Developmental Industrial/Org. Neuropsychology School Social Sport

e. Bill, a Vietnam War veteran, continues to suffer flashbacks of traumatic events that occurred during the war. His fellow combat buddies think that Mark is suffering from Post Traumatic Stress Disorder and would like him to see an expert.

Clinical Educational Experimental Developmental Industrial/Org. Neuropsychology School Social Sport

f. Millie is a 6-year old child who is suspected of having mental retardation. Her parents would like to have her examined in order to determine if she qualifies for special education services.

Clinical Educational Experimental Developmental Industrial/Org. Neuropsychology School Social Sport

g. Sam is a college basketball player who lately has been inconsistent with his jump shot. He would like to visit with a psychologist in order to be more consistent.

Clinical Educational Experimental Developmental Industrial/Org. Neuropsychology School Social Sport

h. Terri, a CEO of a large corporation, wishes to hire a psychologist in order to assess the overall morale or her employees.

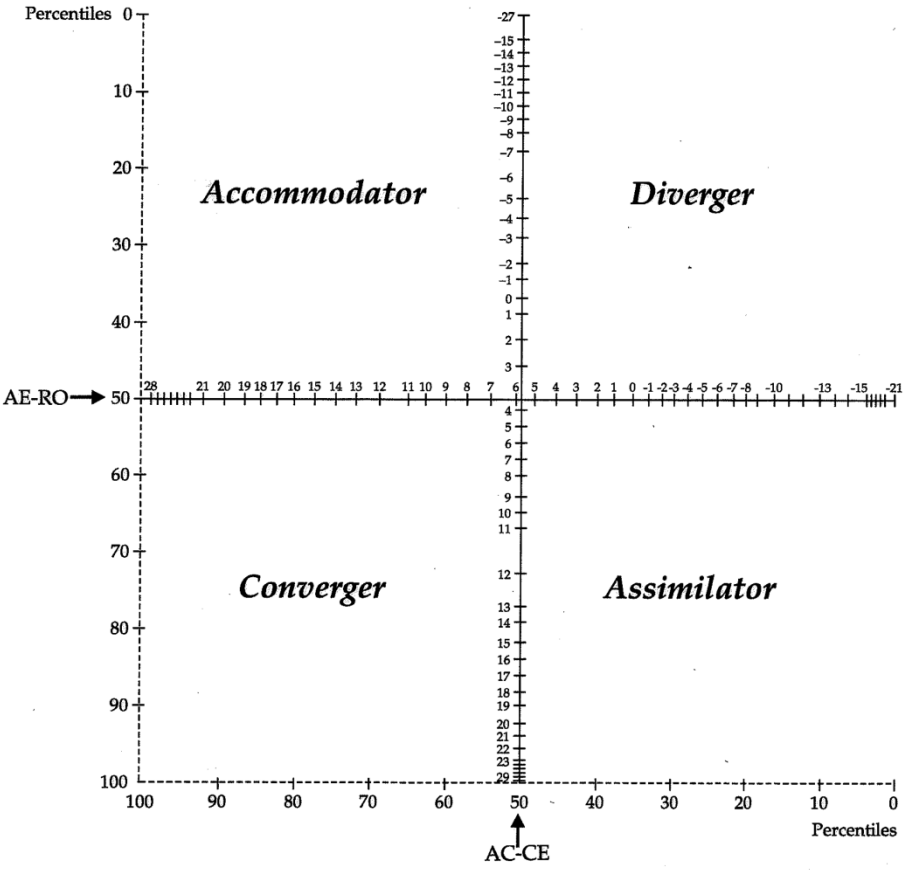
Clinical Educational Experimental Developmental Industrial/Org. Neuropsychology School Social Sport

i. Mike wishes to investigate how an individual's behavior tends to conform to the group that they are a part of.

Clinical Educational Experimental Developmental Industrial/Org. Neuropsychology School Social Sport

Appendix D
Learning Style Graph

LEARNING-STYLE TYPE GRID



Appendix E
Frequently Asked Questions Handout*

What is School Psychology?

"School psychology is a general practice and health service provider specialty of professional psychology that is concerned with the science and practice of psychology with children, youth, families; learners of all ages; and the schooling process." *(Fagan & Wise, 2007)*

What does a School Psychologist Do?

School psychologists serve many roles and functions, including but not limited to: consultation with parents, educations, and others regarding academic, behavioral, cultural, social, and emotional assessments and issues; Intervene with instructional and behavioral interventions aimed at improving academic and social-emotional outcomes, assess students to better understand strengths and concerns; conduct and translate research for practice; advocate for children's rights

What Degree(s) are Required?

School psychology training generally results in a specialist-level degree or doctoral degree. For school-based practice, the Educational Specialist Degree or Masters Degree with Internship are required, while practice outside of schools requires a Doctoral degree with psychology license

Where do School Psychologists Work?

Depending on degree held, school psychologists can work in numerous settings, including but not limited to: K-12 schools, post-secondary schools, hospitals and treatment centers, community mental health centers, college/university settings, private practice, research, and publishing.

What is the Demand for School Psychologists?

School psychologists are continually in demand. A large number of practitioners are retiring while the population in schools is growing, leading to school psychology being ranked as a top career by *US News and World Report* several years running.

What is the Starting Salary for School Psychologists?

Starting salaries vary by region and setting. The average annual salary for a practitioner in schools ranges from $47,880 to $67,070 and top salaries can exceed $100,000. The mean per-diem salary for specialist-level practitioners is $287, while for doctoral-level practitioner per-diem mean is around $350. On top of a salary, doctoral-level practitioners can engage in private practice and earn yet more income.

What are some Job Benefits for School Psychologists?

Job satisfaction among school psychologists is high and remains relatively stable. The ability to provide a social service, work independently, maintain positive relationships with co-workers, and an overall enjoyment of job activities contribute to the

overall high job satisfaction held by school psychologists. Job security, salary, and working conditions are also factors that play into high job satisfaction.

Where can I Learn More About School Psychology?

There are several large professional organizations that may be of use:

American Psychological Association-Division 16
http://www.indiana.edu/~div16/index.html
National Association of School Psychologists
http://www.nasponline.org/
International School Psychology Association
http://www.ispaweb.org/

*Based on APA's Division 16 Power Point Presentation: http://search.apa.org/search?query=School%20Psychology and NASP's FAQs: http://www.nasponline.org/about_sp/careerfaq.aspx

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